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### (54) METHOD AND APPARATUS OF WATCHING BROADCAST PROGRAM, AND WATCHING PROGRAM FOR BROADCAST PROGRAM

#### (57)Abstract:

**PROBLEM TO BE SOLVED:** To construct a program watching apparatus capable of automatically acquiring an auxiliary program information on a broadcast program being watched from a web site provided through the Internet and displaying it on the display screen of a terminal.

**SOLUTION:** A broadcast channel of a tuner 521 is selected to receive program information. The name of the program is obtained by a program name information acquiring means 528 and transmitted to a terminal through an interface means 527b.

On the terminal side, program auxiliary information provided by a program information provider through a network based on the name of the supplied program is automatically acquired to be displayed on the display unit of the terminal, thus attaining the architecture of the broadcast watching apparatus.

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## CLAIMS

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[Claim(s)]

[Claim 1] The program information provider side who provides through a network by making into program auxiliary information additional information which starts said program information the broadcaster side who offers program information by the predetermined broadcast channel, The 1st step which is the viewing-and-listening approach of the program for viewing and listening by receiving each information offered from a \*\*\*\*\* side, selects said broadcast channel and receives said program information, The 2nd step which displays the program information received and acquired as said image for viewing and listening, The 3rd step which acquires the program name information concerning the name of said program information, It has at least the 4th step which supplies said program name information to the terminal unit side which displays said program auxiliary information. In said terminal unit side The viewing-and-listening approach of the program characterized by being what acquires said program auxiliary information transmitted from said program information provider

side as said program auxiliary information for a display while transmitting said supplied program name information to said program information provider side through said network.

[Claim 2] The program information provider side who provides through a network by making into program auxiliary information additional information which starts said program information the broadcaster side who offers program information by the predetermined broadcast channel, It is the viewing-and-listening approach of the program for viewing and listening by receiving each information offered from a \*\*\*\*\* side. While selecting said broadcast channel, receiving said program information, reproducing the 1st step which records the program information signal received and acquired on a predetermined record medium, and said record medium and acquiring said program information signal The 2nd step which supplies the acquired program information signal as a video signal for viewing and listening, The 3rd step which acquires the program name information concerning the name of said program information, It has at least the 4th step which supplies said program name information to the terminal unit side which displays said program auxiliary information. In said terminal unit side The viewing-and-listening approach of the program characterized by being what acquires said program auxiliary information transmitted from said program information provider side as said program auxiliary information for a display while transmitting said supplied program name information to said program information provider side through said network.

[Claim 3] Said program name information in said 3rd step is the viewing-and-listening approach of the program according to claim 1 or 2 characterized by what is been the address information which starts the acquisition location of said program auxiliary information or it is the program name indicated by the electronic program guide acquired beforehand.

[Claim 4] The program information provider side who provides through a network by making into program auxiliary information additional information which starts said program information the broadcaster side who offers program information by the predetermined broadcast channel, A program signal receiving means to be program viewing-and-listening equipment for viewing and listening by receiving each information offered from a \*\*\*\*\* side, to select said broadcast channel, to receive said program information, and to acquire program information, A program name information acquisition means to acquire the program name information concerning the name of said program information received by the program signal receiving means, The interface means for signal transmissions for transmitting to the terminal unit side which acquires said program auxiliary information and displays said the acquired program name information, Even if few, it provides and constitutes. In said terminal unit side Program viewing-and-listening equipment characterized by being what acquires said program auxiliary information transmitted from said program information provider side as said program auxiliary information for a display while transmitting said

supplied program name information to said program information provider side through said network.

[Claim 5] The program information provider side who provides through a network by making into program auxiliary information additional information which starts said program information the broadcaster side who offers program information by the predetermined broadcast channel, It is program viewing-and-listening equipment for viewing and listening by receiving each information offered from a \*\*\*\*\* side. A program information record means to select said broadcast channel, to receive said program information, and to record the program information received and acquired on a predetermined record section, A program information playback means to reproduce said predetermined record section of said program information recorded by the program information record means, and to acquire said program information, A program name information acquisition means to acquire the program name information concerning the name of said program information reproduced by the program information playback means, The interface means for signal transmissions for transmitting to the terminal unit side which acquires said program auxiliary information and displays said the acquired program name information, Even if few, it provides and constitutes. In said terminal unit side Program viewing-and-listening equipment characterized by being what acquires said program auxiliary information transmitted from said program information provider side as said program auxiliary information for a display while transmitting said supplied program name information to said program information provider side through said network.

[Claim 6] The program name information acquired with said program name information acquisition means is program viewing-and-listening equipment according to claim 4 or 5 characterized by what is been the address information which starts the acquisition location of said program information or it is the program name indicated by the electronic program guide acquired beforehand.

[Claim 7] The program information provider side who provides through a network by making into program auxiliary information additional information which starts said program information the broadcaster side who offers program information by the predetermined broadcast channel, The 1st step which is the program for viewing and listening of the program for viewing and listening by receiving each information offered from a \*\*\*\*\* side, selects said broadcast channel and receives said program information, The 2nd step which acquires the program name information concerning the name of said program information, It has at least the 3rd step which supplies said program name information to the terminal unit side which displays said program auxiliary information. In said terminal unit side While transmitting said supplied program name information to said program information provider side through said network The program for viewing and listening of the program for performing the computer characterized by being what acquires said program auxiliary information transmitted from said program information provider side as said program auxiliary

information for a display.

[Claim 8] The program information provider side who provides through a network by making into program auxiliary information additional information which starts said program information the broadcaster side who offers program information by the predetermined broadcast channel, It is the program for viewing and listening of the program for viewing and listening by receiving each information offered from a \*\*\*\*\* side. The 1st step which selects said broadcast channel, receives said program information, and records the program information signal received and acquired on a predetermined record medium, The 2nd step which reproduces said record medium and acquires said program information signal, It has at least the 3rd step which supplies said program name information to the terminal unit side which displays said program auxiliary information. In said terminal unit side While transmitting said supplied program name information to said program information provider side through said network The program for viewing and listening of the program for performing the computer characterized by being what acquires said program auxiliary information transmitted from said program information provider side as said program auxiliary information for a display.

[Claim 9] Said program name information in said 3rd step is the program for viewing and listening of the program for performing the computer according to claim 7 or 8 characterized by what is been the address information which starts the acquisition location of said program auxiliary information or it is the program name indicated by the electronic program guide acquired beforehand.

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Field of the Invention] This invention relates to the viewing-and-listening approach of the program concerning the program viewing-and-listening system constituted by the program receiving set which receives the program broadcast, the program image transcription equipment which performs record of the received program, and the terminal unit which acquires the program information which is connected to the Internet and offered by the program information provider, program viewing-and-listening equipment, and the program for viewing and listening of a program.

[0002]

[Description of the Prior Art] Conventionally the program broadcast from a broadcasting station is received by the television broadcasting receiving set, and a broadcasting electric-wave is recorded by recording devices, such as VTR and a hard

disk recorder, and the program auxiliary information relevant to a program is further acquired by terminal units, such as a personal computer, in the program auxiliary information offered by the program information provider through the Internet.

[0003] And by connecting the telephone line to the equipment, the information on the Internet is acquired, the television broadcasting receiving set which is displayed on an indicator and which has the so-called Internet connectivity function is also developed by the television broadcasting receiving set, and the part is introduced into it in the commercial scene.

[0004] That is because many companies release information various by the website increasingly with the rapid spread of information transmission systems which uses the Internet, and having come to carry \*\*\*\* information at a website in the program which a broadcast entrepreneur also broadcasts himself also requires the information disclosure.

[0005] Although [ the program information which makes it such and is released on a website being acquired by the program viewer, and viewing and listening to a program ] he wants to also acquire program auxiliary information Although it is made possible to display the information acquired from the website using the television screen in fact The man machine interface of a television broadcasting receiving set has many which have function sufficient as an object for website retrieval, and its thing also with the low use situation that the information on the website using TV receiving set is acquired is actual.

[0006] Furthermore, in order to carry out multiplex to the video signal of a program while receiving the display screen of a website and to display on it Performing the division display of displaying the aperture screen for a website display all over the television screen which carries out division contraction of the television screen Since the program information under viewing and listening is not fully displayed, from Men of program viewing and listening, are not desirable. As for presenting of the information acquired from a website, it is most practical to peruse the information on a website using a different independent terminal unit from a television set, for example, a personal computer, a Web terminal, etc.

[0007]

[Problem(s) to be Solved by the Invention] By the way, when it was going to acquire the auxiliary information which views and listens to a program using such a broadcast receiving set, and starts the program under reception with a personal computer etc., by performing actuation for access to the website concerning the broadcasting station under reception, the viewer had need, such as accessing by discovering the program information page program information is described to be, and was more complicated than the website.

[0008] So, in this invention, the information which starts the program name under reception with a television broadcasting receiving set tends to be transmitted to terminal units, such as a personal computer, through Home LAN (Local Area Network)

etc., and the personal computer tends to realize the viewing-and-listening approach of the program which was made to display by acquiring automatically the program auxiliary information which a program information provider offers based on the transmitted program information, program viewing-and-listening equipment, and the program for viewing and listening of a program.

[0009] And it is made to access the website which starts the program name automatically as specifies a \*\* Li program name as the information concerning the program name collating the electronic program guide, the receiving channel, and the receipt time which were beforehand acquired by the television broadcasting receiving set and transmits to a personal computer. Moreover, when the URL (Uniform Resource Locator) information concerning the website name to which the auxiliary information for program viewing and listening concerning the program exists in information, such as the electronic program guide, is described The URL information is transmitted to a personal computer, the information automatically described by the website is acquired, and it was made to display.

[0010] Furthermore, even if it is a time of recording the program broadcast on videotape by a hard disk recorder etc., and viewing and listening to the program using a time shift function The URL information which starts the program name information under viewing and listening or its program from program viewing-and-listening equipment is transmitted to a personal computer. When acquisition of program information is more possible than the website based on the URL, it is going to offer the automatic display function of the auxiliary information acquires the program auxiliary information concerning the program under the playback, and it also enabled it to display on terminal units, such as a personal computer.

[0011]

[Means for Solving the Problem] This invention consists of the following means of 1-9, in order to solve the above-mentioned technical problem. Namely, [0012] 1) The program information provider side who provides through a network by making into program auxiliary information additional information which starts said program information the broadcaster side who offers program information by the predetermined broadcast channel, The 1st step which is the viewing-and-listening approach of the program for viewing and listening by receiving each information offered from a \*\*\*\*\* side, selects said broadcast channel and receives said program information (521), The 2nd step which displays the program information received and acquired as said image for viewing and listening (522, 524, 525), The 3rd step which acquires the program name information concerning the name of said program information (528), It has at least the 4th step (527b) which supplies said program name information to the terminal unit side which displays said program auxiliary information. In said terminal unit side The viewing-and-listening approach of the program characterized by being what acquires said program auxiliary information transmitted from said program information provider side as said program auxiliary

information for a display while transmitting said supplied program name information to said program information provider side through said network.

[0013] 2) The program information provider side who provides through a network by making into program auxiliary information additional information which starts said program information the broadcaster side who offers program information by the predetermined broadcast channel, It is the viewing-and-listening approach of the program for viewing and listening by receiving each information offered from a \*\*\*\*\* side. While selecting said broadcast channel, receiving said program information, reproducing the 1st step (501 506) which records the program information signal received and acquired on a predetermined record medium, and said record medium and acquiring said program information signal The 2nd step which supplies the acquired program information signal as a video signal for viewing and listening (506 514), The 3rd step which acquires the program name information concerning the name of said program information (509), It has at least the 4th step (508b) which supplies said program name information to the terminal unit side which displays said program auxiliary information. In said terminal unit side The viewing-and-listening approach of the program characterized by being what acquires said program auxiliary information transmitted from said program information provider side as said program auxiliary information for a display while transmitting said supplied program name information to said program information provider side through said network.

[0014] 3) Said program name information in said 3rd step is the viewing-and-listening approach of a program 1 characterized by what is been the address information which starts the acquisition location of said program auxiliary information or it is the program name indicated by the electronic program guide acquired beforehand, or given in 2 terms.

[0015] 4) The program information provider side who provides through a network by making into program auxiliary information additional information which starts said program information the broadcaster side who offers program information by the predetermined broadcast channel, A program signal receiving means to be program viewing-and-listening equipment for viewing and listening by receiving each information offered from a \*\*\*\*\* side, to select said broadcast channel, to receive said program information, and to acquire program information (521 522), A program name information acquisition means to acquire the program name information concerning the name of said program information received by the program signal receiving means (528), The interface means for signal transmissions for transmitting to the terminal unit side which acquires said program auxiliary information and displays said the acquired program name information (527b), Even if few, it provides and constitutes. In said terminal unit side Program viewing-and-listening equipment characterized by being what acquires said program auxiliary information transmitted from said program information provider side as said program auxiliary information for a display while transmitting said supplied program name information to said program



information provider side through said network.

[0016] 5) The program information provider side who provides through a network by making into program auxiliary information additional information which starts said program information the broadcaster side who offers program information by the predetermined broadcast channel, It is program viewing-and-listening equipment for viewing and listening by receiving each information offered from a \*\*\*\*\* side. A program information record means to select said broadcast channel, to receive said program information, and to record the program information received and acquired on a predetermined record section (501 506), A program information playback means to reproduce said predetermined record section of said program information recorded by the program information record means, and to acquire said program information (506 505), A program name information acquisition means to acquire the program name information concerning the name of said program information reproduced by the program information playback means (509), The interface means for signal transmissions for transmitting to the terminal unit side which acquires said program auxiliary information and displays said the acquired program name information (508b), Even if few, it provides and constitutes. In said terminal unit side Program viewing-and-listening equipment characterized by being what acquires said program auxiliary information transmitted from said program information provider side as said program auxiliary information for a display while transmitting said supplied program name information to said program information provider side through said network.

[0017] 6) The program name information acquired with said program name information acquisition means is program viewing-and-listening equipment 4 characterized by what is been the address information which starts the acquisition location of said program information or it is the program name indicated by the electronic program guide acquired beforehand, or given in 5 terms.

[0018] 7) The program information provider side who provides through a network by making into program auxiliary information additional information which starts said program information the broadcaster side who offers program information by the predetermined broadcast channel, The 1st step which is the program for viewing and listening of the program for viewing and listening by receiving each information offered from a \*\*\*\*\* side, selects said broadcast channel and receives said program information (S14), The 2nd step which acquires the program name information concerning the name of said program information (S18), It has at least the 3rd step (S19) which supplies said program name information to the terminal unit side which displays said program auxiliary information. In said terminal unit side While transmitting said supplied program name information to said program information provider side through said network The program for viewing and listening of the program for performing the computer characterized by being what acquires said program auxiliary information transmitted from said program information provider side as said program auxiliary information for a display.

[0019] 8) The program information provider side who provides through a network by making into program auxiliary information additional information which starts said program information the broadcaster side who offers program information by the predetermined broadcast channel, It is the program for viewing and listening of the program for viewing and listening by receiving each information offered from a \*\*\*\*\* side. The 1st step which selects said broadcast channel, receives said program information, and records the program information signal received and acquired on a predetermined record medium, The 2nd step which reproduces said record medium and acquires said program information signal (S31), It has at least the 3rd step (S39) which supplies said program name information to the terminal unit side which displays said program auxiliary information. In said terminal unit side While transmitting said supplied program name information to said program information provider side through said network The program for viewing and listening of the program for performing the computer characterized by being what acquires said program auxiliary information transmitted from said program information provider side as said program auxiliary information for a display.

[0020] 9) Said program name information in said 3rd step is the program for viewing and listening of the program for performing a computer 7 characterized by what is been the address information which starts the acquisition location of said program auxiliary information or it is the program name indicated by the electronic program guide acquired beforehand, or given in 8 terms.

[0021]

[Embodiment of the Invention] Hereafter, a desirable example explains about the gestalt of implementation of the viewing-and-listening approach of the program of this invention, program viewing-and-listening equipment, and the program for viewing and listening of a program. Drawing 1 is the outline block diagram of the viewing-and-listening system of the program in connection with the example, and describes the configuration and actuation.

[0022] The viewing-and-listening system of the program in this drawing consists of a service provision firm 1 which has the program information offer server 10, the Internet 30, and user \*\* 5 which has the hard disk recorder 50, a personal computer 51, and a television receiver 52.

[0023] And the program information offer server 10 is connected to the personal computer 51 through the Internet 30, and the personal computer 51 is connected to the hard disk recorder 50 and the television receiver 52 through domestic [ LAN ], and the video-signal output of the hard disk recorder 50 is further connected to the television receiver 52.

[0024] Next, actuation of the viewing-and-listening system of the program constituted in this way is described. The viewing-and-listening system of this program by the hard disk recorder 50 which performs the image transcription and playback of the television receiver 52 which receives the broadcast wave emitted from a

television broadcasting station, and its broadcast wave Although the received program or the program by which image transcription playback was carried out is displayed on a television receiver 52 The user of a television receiver 52 acquires automatically the program auxiliary information with which the program is started and provided, and he is trying to display on the drop of a personal computer 51. the display of the program boiled and displayed on a television receiver 52 is performed continuously, and he is trying for program viewing and listening by the side of a user not to interrupt it

[0025] Although program viewing and listening by two approaches, the case where it carries out by the hard disk recorder 50 receiving a broadcast wave, and when a broadcast wave is received and displayed with a television receiver 52, is possible for the program viewing and listening, it describes the approach of program viewing and listening performed by using a television receiver 52 first.

[0026] First, although a broadcast receiving channel is set up by the user, broadcast is received and the received video signal is displayed with a television receiver 52, the receiving channel information concerning the receiving channel is supplied to a personal computer 51 through domestic [ LAN ] (Local Area Network).

[0027] As for the personal computer 51 with which the receiving channel information was transmitted, the description concerning the program currently broadcast by the program information offer server 10 of the service provision firm 1 through the Internet 30 at the current predetermined broadcasting station etc. asks for offer of program auxiliary information.

[0028] The auxiliary information which starts a program to the personal computer 51 of user \*\* 5, for example, the inclusion information in a drama, the information concerning a performer, etc. are transmitted, and the program information offer server 10 of the service provision firm 1 which is in the privity of contract of user \*\* 5 and service provision beforehand displays the auxiliary information transmitted and received on the drop of a personal computer 51 in a personal computer 51.

[0029] While a user views and listens to the program displayed on a television receiver 52 and \*\* Li and more effective program viewing and listening are made to perusing the display screen of a personal computer 51 if needed Without making small amount of information [ in / by interrupting the program under viewing and listening, or carrying out screen separation and displaying etc. / the display screen of a program ] Program information can be displayed, and it can carry out, continuing suitably viewing and listening of a program — the time amount to which a user views and listens to auxiliary information is also made by a user's hope.

[0030] Thus, the program auxiliary information acquired from the program offer server can perform offer of suitable program related information, without barring program viewing and listening of a user, displaying a program on a television receiver 52.

[0031] Next, the viewing-and-listening approach of the program performed using the hard disk recorder 50 is described. The hard disk recorder 50 has the function which

supplies and displays the video signal which reproduces the video signal immediately after supplying and displaying the acquired video signal on the direct television receiver 52, or recording and recording a video signal on a hard disk, and is reproduced and acquired on a television receiver 52 while acquiring the video signal which receives a program and starts a program.

[0032] The method of reproducing, viewing and listening to the signal recorded on the hard disk is called the cache rec/play function, and the viewing-and-listening approach of a new program -- the image part of the past currently recorded on the hard disk can be specified by easy actuation, the program part which the user overlooked, and the program part it is repeatedly expected of viewing and listening can be reproduced, and it can view and listen -- can realize in the cache rec/play.

[0033] And outside it performs the cache rec/play to the program under present viewing and listening, it records the program broadcast in the past on the cache record section, and it can also perform simple time shift viewing and listening to which it views and listens when viewing-and-listening time amount is secured to a user.

[0034] It is related with the cache record playback for performing the time shift viewing and listening. "The application for patent No. 219421 [ 2001 to ] for which the invention-in-this-application person invented and the applicant for this patent applied The record playback approach of a video signal, "And a video-signal record regenerative apparatus" (it is un-opening to the public at the time of this application application), and an application for patent No. 301494 [ 2001 to ] The record playback approach of a program, It is indicated by the program record regenerative apparatus and the program for program record playback" (it is un-opening to the public at the time of this application application), and it is thought that many hard disk recorders which carry such a convenient cache record regenerative function continue to be introduced into a commercial scene.

[0035] Although there are both viewing and listening of the program broadcast now and program viewing and listening recorded on the past in viewing and listening of a program using such a hard disk recorder, it is made as [ display / the program information which starts a viewing-and-listening program with the above-mentioned personal computer 51 also in viewing and listening of which / these / program / acquire and ].

[0036] Therefore, it sets to the case in both cases of being based on the program broadcast in the past, when viewing and listening of the program by the hard disk recorder 50 is based on the program broadcast now. The information which starts the program under viewing and listening through domestic [ LAN ] from the hard disk recorder 50 is supplied to a personal computer 51, and transmission of the program information which starts the supplied program to a program information offer server is required of the program information offer server 10 from a personal computer 51.

[0037] And there is the approach of performing using the time information it was broadcast that specification of the program name was although the demand of the

program information from the personal computer 51 was performed by specifying the program name also to the program broadcast in the past, and broadcast channel information, and there is also a method of specifying a program name directly and performing it.

[0038] That is, in the case of the approach [ of specifying the program name directly and performing it ], the electronic program guide is acquired beforehand, program name information is acquired based on broadcast channel information, broadcast time information, etc. on the electronic program guide, the acquired program name information is transmitted to a program information offer server, and transmission of the program auxiliary information concerning the program name is required.

[0039] It is made such. From the program information offer server 10 Also as opposed to the program which the program auxiliary information concerning the demanded program name was supplied to the personal computer 51, and recorded the program auxiliary information in the past It is made also to the program by which viewing and listening of the same program was broadcast as it being made as [ display / on the indicator of a personal computer 51 / the program auxiliary information which started the program and was acquired ], and having been made with the television receiver 52 in the past.

[0040] As mentioned above, the viewing-and-listening environment of a suitable program is realizable by the viewing-and-listening system of this program -- the program auxiliary information concerning the display with the personal computer 51 of the program auxiliary information concerning the program broadcast now by the television receiver 52 and the program broadcast by the hard disk recorder in the past under playback is displayed with a personal computer 51.

[0041] Next, the configuration of the service provision firm 1 which constitutes the viewing-and-listening system of the program is described. The configuration of service provision firm 10a is shown in drawing 2 .

[0042] In this drawing, the service provision firm 10a consists of a program information database 11, a program auxiliary information database 12, and a network interface 16, and the network interface 16 is connected to the Internet 30.

[0043] Next, actuation of service provision firm 10a constituted such is described. First, were transmitted through the Internet 30 by the user 5 who is in privity of contract beforehand. The broadcast time information concerning the program which current broadcast is carried out [ to which a user 5 is viewing and listening ], or was broadcast in the past, The information concerning program names, such as broadcast channel information, address information on a broadcasting station, or program name information, is acquired through a network interface 16, the information concerning the acquired program name is compared with the program information database 11, and specification of a program name is made.

[0044] Next, it is investigated whether it is accumulated in the program auxiliary information database 12, and the program auxiliary information concerning the

program name by which the specification was made is transmitted to user \*\* 5 through a network interface 16 and the Internet 30 in the auxiliary information, when the program auxiliary information concerning the program name is accumulated.

[0045] The program auxiliary information which made it such and was transmitted to the user side is received by the personal computer 51, program auxiliary information is displayed on the indicator of a personal computer 51, and the display information is perused by the user who is viewing and listening to a program if needed by the television receiver 52 or the hard disk recorder 50.

[0046] Next, the configuration and actuation of the television receiver 52 for displaying program auxiliary information on such a personal computer 51 are described. The configuration of a television receiver 52 is shown in drawing 3 .

[0047] The television receiver 52 shown in this drawing consists of a tuner 521, the image circuit 522, an adder circuit 523, a display circuit 524, the Braun tube 525, the multiple-signal generation circuit 526, network interface 527a, domestic LAN interface 527b, a microcomputer 528, temporary storage memory 528a, and a remote control interface 529, and remote control 59 is combined with the remote control interface 529 by infrared radiation.

[0048] Next, actuation of the television receiver 52 constituted such is described. First, when a power source is switched on, or when the actuation for displaying an electronic program guide with remote control 59 etc. is made, the actuation information is supplied to a microcomputer 528 through the remote control interface 529, and a microcomputer 528 acquires the electronic program guide which an electronic program guide provider offers through network interface 527a.

[0049] The electronic program guide transmitted to the program under broadcast by accompanying outside it performs acquisition of the electronic program guide through the Internet 30 is obtained with a tuner 521, the obtained electronic program guide is supplied to a microcomputer 528, and a microcomputer 528 makes temporary storage memory 528a supply and memorize the electronic program guide.

[0050] The electronic program guide stored temporarily at the temporary storage memory 528a for the carbon button for an electronic program guide display of remote control 59 to be operated \*\* Li, The contents of actuation are supplied to a microcomputer 528 through the remote control interface 529. A microcomputer 528 supplies the electronic program guide memorized by temporary storage memory 528a to the multiple-signal generation circuit 526. The video-signal information concerning the electronic program guide generated in the multiple-signal generation circuit 526 is supplied to an adder circuit 523. In the adder circuit 523, the video signal with which addition composition was carried out with the video signal supplied from an image circuit, and the addition composition was carried out is changed into the signal for driving the Braun tube 525 by the display circuit 524, and the changed signal is supplied and displayed on the Braun tube 525.

[0051] Although it is made such and the acquired electronic program guide is

displayed on the Braun tube 525, the program which a user likes among the displayed program is specified with remote control 59 etc., the specified receiving channel information is supplied to a microcomputer 528 through network interface 527a, and a microcomputer 528 transmits the information concerning the broadcast channel which should be received to a tuner 521.

[0052] The signal of the receiving channel set up in the tuner 521 among the signals supplied from an antenna gets over, the intermediate frequency signal concerning the program is acquired, the acquired intermediate frequency signal is supplied to the image circuit 522, a video signal gets over, and it is obtained, and the acquired video signal is supplied to the Braun tube 525 through an adder circuit 523 and a display circuit 524, and the display of a video signal is made.

[0053] The receiving channel information concerning the program name which makes it such, is specified and is received is supplied to a personal computer 51 through domestic LAN interface 527b, the personal computer 51 acquires the program auxiliary information which starts the supplied program name as mentioned above, and the acquired program auxiliary information is displayed on the drop of PASOKONN 51.

[0054] Thus, a user can perform suitable viewing and listening of the program to like using both program image under reception displayed on television, and program auxiliary information which is automatically acquired by the personal computer 51 and is displayed on it.

[0055] Next, the approach of program viewing and listening performed to the television receiver 52 using the hard disk recorder which views and listens to the program broadcast in the past is described. The configuration of the hard disk recorder 50 is shown in drawing 4 .

[0056] The hard disk recorder 50 shown in this drawing The TV tuner 501, A/D converter 502, MPEG-2 encoder 503, REC-FIFO504, the hard disk record regenerator 505, a hard disk 506, the write-in read-out controller 507, network interface 508a, Domestic LAN interface 508b, It is constituted by the program name discrimination circuit 509, buffer memory 511, MPEG-2 decoder 512, OSD (On Screen Display)513, D/A converter 514, a microcomputer 516, the temporary storage memory 517, and the remote control interface 519.

[0057] And the antenna is formed by the TV tuner 501 at network interface 508a as [ supply / the modulated infrared light by which domestic / LAN / is connected to domestic LAN interface 508b, and a television receiver 52 is connected to D/A converter 514, and the Internet 30 is discharged by the remote control interface 519 from remote control 59 ].

[0058] Next, actuation of the hard disk recorder 50 constituted by this appearance is described. First, the electronic program guide transmitted to the broadcast wave received by accompanying through network interface 508a in the electronic program guide supplied by the electronic program guide provider connected to the Internet is obtained through the TV tuner 501, it is obtained, an electronic program guide is

supplied to a microcomputer 516, and the electronic program guide obtained with the microcomputer 516 is supplied and stored temporarily in the temporary storage memory 517.

[0059] When display demand actuation according [ the electronic program guide stored temporarily ] to remote control 59 etc. is made, it is displayed on a television receiver 52, and image transcription reservation is made [ that the program for which the program display information is used and it wishes is chosen, etc. and ].

[0060] And when the broadcast start time of a program when the image transcription reservation was made draws near The channel information which should be received from a microcomputer 516 is supplied to the TV tuner 501. In the TV tuner 501 The video signal with which it is chosen, it is received and the signal of a receiving channel based on the receiving channel information supplied among the broadcasting electric-waves which carry out Iriki is acquired from an antenna is supplied to A/D converter 502, is changed into a digital signal and supplied to MPEG-2 encoder 503.

[0061] In the MPEG-2 encoder 503, the signal with which compression coding of the supplied signal was carried out according to MPEG-2 (moving picture experts group - 2) standard defined by ISO/IEC (International Organization for Standardization/International Electrotechnical Commission), and the compression coding was carried out is supplied to REC-FIFO504.

[0062] In the REC-FIFO504, FIFO (first in first out) actuation of the signal for record (recording), Namely, it is the circuit which stores the signal supplied temporarily and outputs the signal to the inputted order. The signal supplied from the circuit is supplied to the hard disk record regenerator 505. In the hard disk record regenerator 505 The supplied signal is divided for every sector size as a signal recorded on a hard disk 506, and the divided signal is supplied to the hard disk 506 by which motion control is carried out to the write-in read-out controller 507, and is recorded on the disc-like record medium which is not illustrated.

[0063] And record of the video signal divided for every sector size of the is recorded, being managed according to management information including a location, a receiving channel number, the receipt time, a program name, etc. of the compression parameter of a video signal, and the record sector to a hard disk for every data of the sector size. Moreover, the management information is made as [ record / on the management information record section which a hard disk 506 does not illustrate / store temporarily in the management domain which is constituted by the memory circuit etc. and which is not illustrated, or ].

[0064] Thus, the video signal with which the broadcast channel was chosen and received, and the accompanying acoustic signal which is not illustrated are made into the video signal by which compression coding was carried out, and an acoustic signal, and those video signals and an acoustic signal are divided for every sector size, and are recorded on a hard disk 506. Next, playback of the signal recorded on the hard disk 506 is described.



[0065] First, when the playback carbon button of remote control 59 is operated by the viewer The contents of actuation are transmitted to the remote control interface 519 as a modulated infrared light line. The signal concerning the contents of actuation transmitted to the remote control interface 519 is supplied to a microcomputer 516. From the microcomputer 516 According to the contents of actuation, the control signal with which the above-mentioned management information was also referred to and generated writes in, and the read-out controller 507 is supplied. Based on the control signal supplied to the write-in read-out controller 507, the playback part of the predetermined sector of a hard disk 506 is specified. The signal of the image transcription part concerning the program made into the purpose is read from the hard disk 506, and the read signal is supplied to the hard disk record regenerator 505. [0066] Magnification of the signal read from the hard disk 506 in the hard disk record regenerator 505, Amendment of a frequency response characteristic etc. is performed and the signal amended [ property / the ] is supplied to buffer memory 511. And in the buffer memory 511 The video signal which is supplied and by which compression coding was carried out is stored temporarily, and the signal stored temporarily is read according to the demand from MPEG-2 decoder 512, and is supplied to the MPEG-2 decoder 512.

[0067] In the MPEG-2 decoder 512, said management information also being referred to, as for the video signal with which supplied compression coding was made, it is decrypted based on MPEG-2 criterion, the digital video signal which was decrypted and was acquired is supplied to D/A converter 514 through OSD (On Screen Display)513, a digital video signal is changed into an analog video signal there, and it is supplied and displayed on a television receiver 52.

[0068] The status signal which should carry out [ a status signal ] multiplex to the video signal displayed on a television receiver 52 if needed, and should be displayed on it in the OSD513 is generated. The generated status signal is displayed on the direct television receiver 52. Or the digital video signal for considering as the composite signal by which multiplex was carried out to the decrypted video signal, and displaying is generated. The generated digital video signal is supplied to D/A converter 514, and the image of the program which the analog video signal changed with the D/A converter 514 was supplied to the television receiver 52, and was selected is displayed.

[0069] Thus, although the video signal of the program recorded on the hard disk 506 is reproduced The information signal concerning the program name recorded on playback and coincidence of the video signal by said management domain is also read. The read information signal is transmitted to a personal computer 51 through domestic LAN interface 508b. The information signal concerning the program name supplied in the personal computer 51 is supplied to the program information offer server 10. From the program information offer server 10, the program auxiliary information concerning the program is transmitted to a personal computer 51, a

personal computer 51 receives the supplied program auxiliary information, and presenting of the information is performed.

[0070] Since presenting of the program auxiliary information in the personal computer 51 is made with the video signal of the program in a television receiver, a user can view and listen to the program which utilized effectively two screens, such as acquiring viewing-and-listening information from the screen of the direction for which it is needed of both the screens displayed.

[0071] By the hard disk recorder which is divided for every sector size as mentioned above, and can perform record and playback at a high speed at a hard disk Since the program recorded on the location left on the hard disk is also continuously reproducible, For example, even if it is a case as image transcription reservation is carried out continuously and two or more programs were recorded Playback of the program can reproduce \*\* Li and the specified program to specify only the program for which it wishes, accessing in an instant, and the auxiliary information which starts the program under viewing and listening as mentioned above is automatically acquired with a personal computer 51, and is displayed on coincidence.

[0072] Next, playback actuation of the program auxiliary information on a hard disk recorder that it has such a convenient function is described further. First, although the program auxiliary information displayed on the above-mentioned personal computer 51 was described as program auxiliary information offered by the service provision firm 1, the auxiliary information is offered from other service providers by the broadcaster who is performing the broadcast.

[0073] And in order to acquire the program auxiliary information offered by the broadcaster, the information which the broadcasting station offers on a \*\* Li web browser can be displayed on specifying URL (Uniform Resource Locator) of the homepage of the broadcasting station concerning the program under reception by the web browser carried in a personal computer 51.

[0074] And although the hard disk recorder 50 may own although the information concerning the program under viewing and listening is discovered and perused from the information which the broadcasting station offers when a personal computer 51 owns the conversion table of URL of the receiving channel for it, and the homepage of a broadcasting station or, you may make it the hard disk recorder 50 supply the owned URL information to a personal computer 51.

[0075] make it any, although the contents of the homepage which the URL information on the broadcasting station which starts the program under viewing and listening with a personal computer 51 is specified, and the broadcasting station offers are displayed on a personal computer Although it is convenience -- the display of the homepage of the broadcasting station is acquired automatically, and is displayed with modification of a receiving channel -- When modification actuation of a receiving channel is performed by the user who is others, for example, lives together while the user perused the homepage of the broadcasting station Since the contents of the

homepage of other broadcasting stations where the display screen of a personal computer 51 was also changed will be displayed, in actuation by such other users, the homepage under perusal is displayed [ that it will be / direction / desirable ] as it is. [0076] Then, even if the display screen of the personal computer 51 when actuation of channel modification is made is the midst which is following the link which relates to the program in the homepage of each station if the homepage of the broadcasting station newly chosen in a different window is displayed and it is the case where pages other than a top page are being displayed, the screen of a condition will be held the middle.

[0077] And while the personal computer 51 is opening the program page concerning the program under viewing and listening In the case where viewing and listening of the same program is made again, URL of the broadcasting station is specified, and a homepage is displayed after specifying the homepage of a different broadcasting station It supposes that the page concerning the program already opened is displayed, and it is necessary to be made not to perform actuation which searches and displays the page of a program again from the page of the top of the broadcasting station.

[0078] Similarly, when channel modification actuation of the hard disk recorder 50 is made, the number of the stations under current viewing and listening is four, and when changing it into ten channels, by the case so that it may be operated to a toggle, it is changed into ten channels via 6 and eight channels using the channel "+" key of remote control.

[0079] Then, 6 via which it goes and the approach by which it is [ direction ] desirable and the channel information do not open the homepage of eight channels and concerning such a progress channel is made not to be transmitted to a personal computer 51 through domestic LAN interface 508b, or domestic LAN interface 508b has a method of transmitting only the receiving channel information when a receiving channel being changed and going through predetermined time to a personal computer 51.

[0080] When there is a page concerning the program already opened by the personal computer 51 as mentioned above, even if it is the case where URL of the broadcasting station concerning the program is specified, it is necessary to be made not to perform actuation for program page retrieval each time, as the page of a program is displayed without displaying the page of the top of the office.

[0081] The example of the display screen of the personal computer which displays the auxiliary information concerning two or more programs on drawing 5 in two or more windows is shown. In this drawing, the condition that multiplex [ of each auxiliary information concerning the program D broadcast by the program C broadcast by the program B broadcast by the program A broadcast by the broadcasting station A and the broadcasting station B and the broadcasting station C and the broadcasting station D ] is carried out by two or more windows, and it is displayed is shown.

[0082] Thus, since two or more windows are used for the personal computer 51 as a

screen for a display and current is viewing and listening to Program D, the screen of Program D is displayed as a topmost part screen, but when viewing and listening, for example to Program A next, the screen of Program A moves to the topmost screen, and is displayed.

[0083] And when a program is under viewing and listening by him and two children and a child performs modification actuation of a receiving channel in the midst of his perusal of the program page, since it is updated and it is displayed on the page of the program which he is perusing that the program page of a new channel becomes the topmost part, it is not desirable.

[0084] However, it supposes that recognition to the user who performed channel modification actuation here is not performed, and prevention of the page of a new program being displayed on the program page under perusal as a priority page is temporarily omitted to the program page under perusal.

[0085] Although it is not technically impossible to detect the remote control operator and to fix the page under current perusal when channel modification actuation is made by different user from such a program page visitor, since carrying it out at present will burden a hard disk recorder or a personal computer with an excessive economic burden, it makes into a design matter whether to make such a function equip.

[0086] In the above, how to specify URL of the broadcaster concerning it, make display a broadcaster's homepage, and choose and display the page of a program from the page was described from the receiving channel information concerning the program under viewing and listening. Next, how to display a program page automatically from a broadcaster's homepage is described.

[0087] It is made to perform the automatic display of the program page using a program name. namely, -- although the hard disk recorder 50 is connected to the electronic program guide provider through network interface 508a -- the network -- or the electronic program guide currently added and transmitted to the program currently broadcast is acquired.

[0088] Although decision of a \*\* Li program name is made to using the acquired electronic program guide, and present time information and receiving channel information, \*\* Li and a personal computer 51 can indicate the page of a program name by automatic using the fixed program name as a retrieval keyword of a Web page.

[0089] Although retrieval of the program name has the approach of searching using the search engine which searches the whole Web page which contains also except a broadcaster, and the approach of performing by site retrieval prepared in the homepage of the broadcaster who is performing broadcast of the program, it uses a program name for any retrieval as a retrieval keyword.

[0090] and the thing for which it performs software corresponding to two or more search methods on a computer although it is necessary to enable it to perform the

approach for making a search by the different approach perform automatically with a personal computer 51 since the approaches of the site retrieval in a homepage differ for every broadcasting station to use for the site retrieval in the homepage of the broadcasting station -- \*\* Li -- it is easily realizable.

[0091] Next, the program software performed on the computer for acquiring the auxiliary information on such a program is described. Drawing 6 shows the flow of the computer program carried in the television receiver which views and listens to a program with a flow chart.

[0092] In this drawing, after the power source of a television receiver is switched on first and viewing and listening of a program is started, discernment of whether an electronic program guide is acquisition ending is performed by S11, and when acquisition of an electronic program guide is not made, an electronic program guide is acquired by S12.

[0093] Acquisition of the electronic program guide is performed by acquiring the electronic program information transmitted to the program information under reception by accompanying from a tuner 521 through network interface 527a etc., and through a microcomputer 528, the acquired program information is supplied to temporary storage memory 528a by S13, and is memorized.

[0094] Although the program which suited a user's taste by S14 by the user who views and listens to a television receiver operating the numerical keypad of remote control 59 etc. is chosen and viewing and listening is started The information concerning the program to which it is viewed and listened by going through after and the predetermined number of seconds as viewing and listening of a program was started acquires the channel information under reception by S15, and acquires current time information by S16, and identifies existence of the program name which corresponds by S17.

[0095] When the program name which corresponds by S17 is detected, while acquiring the discernment program name by S18 and transmitting the acquired program name to a personal computer 51 by S19, it is detected whether the URL information on the website concerning the program which accompanies the electronic program guide by S20 is described.

[0096] And when the URL information concerning the program under the viewing and listening is described, the URL information is transmitted to a personal computer 51 by S21. It is made such, and the personal computer with which program name information or URL information was transmitted acquires the auxiliary information concerning the program sponsored by a service provider or the program broadcaster based on those information, and displays it on the display of a personal computer.

[0097] The existence of modification of a viewing-and-listening program is checked by S22, whenever modification of a viewing-and-listening program is made, actuation of S14 to S21 is performed repeatedly, and such actuation is continued until viewing and listening of a program is completed in S23 and the power source of a television

receiver is made into \*\*.

[0098] Thus, although the auxiliary information concerning the program under viewing and listening is acquired and it is displayed on a personal computer next, the display of the auxiliary information signal in a hard disk recorder is described. Drawing 7 shows the flow of the computer program carried in the hard disk recorder when viewing and listening to the signal which recorded the program with a flow chart.

[0099] In this drawing, after playback of an image transcription signal is first started by S31 and viewing and listening of an image transcription program is started, discernment of whether an electronic program guide is acquisition ending is performed by S32, when acquisition of an electronic program guide is not made, an electronic program guide is acquired by S33, and the acquired electronic program guide is memorized by S34 through a microcomputer 516 at the temporary storage memory 517.

[0100] It identifies whether about the receiving channel information concerning the program name of the image transcription program after acquisition of the electronic program guide, or an acquired check, and under current playback, it is S35 and there is any program name which is each of S36 about record time information, acquires from the above-mentioned management information storage area, and corresponds based on said electronic program guide by S37.

[0101] It is made such, and when the program name information which corresponds by S38 is acquired and applicable program name information is not acquired in the program name information, the receiving channel information and record time information at the time of record are transmitted to a personal computer 51 through domestic LAN interface 508b by S39.

[0102] Furthermore, it is confirmed by S40 whether there is any URL information concerning the website to which the information concerning the program recorded on videotape is opened, and when there is the URL information, the information is transmitted to a personal computer 51 by S41.

[0103] When the actuation for the auxiliary information acquisition concerning such a program to a personal computer 51 detected the modification by S42 when the program currently reproduced was changed, it is made to perform it by having repeated the actuation from S35 when detected, and termination of playback actuation of a hard disk recorder is detected by S43, the above-mentioned step of operation is terminated.

[0104] Or [ to viewing and listening of television ], and for example, it starts playback of a hard disk recorder as mentioned above, auxiliary information, such as a description page of a program, is acquired with a personal computer 51, and it is displayed by the drop of a different personal computer from the video signal of a program, and a viewer can realize the viewing-and-listening environment of a suitable program, using effectively both display screen of a program, and display screen of auxiliary information.

[0105] From the television receiver or hard disk recorder for it, and transmission of the program name information on a personal computer A television receiver or a hard disk recorder acquires an electronic program guide beforehand. Since \*\* Li and program name information can be treated as common program name information among those equipments to transmit using the program name indicated by the electronic program guide, malfunction by mismatching of the program name produced at the time of a program name information transmission etc. can be prevented.

[0106] Moreover, by the case where the provider of an electronic program guide has described URL information over a program, such as a link information to the program page to which it corresponds in the page of an original interpretive article, or the homepage of the broadcasting station, \*\* Li and a personal computer can acquire and display the report information concerning the program under viewing and listening etc. on the electronic program guide transmitting the URL information to a personal computer instead of a program name.

[0107] When the program name information then transmitted transmits both program name of an electronic program guide, and above-mentioned URL information, The personal computer 51 with which two or more URL information could be specified and transmitted, and such two or more program name information was transmitted or each page information acquired based on those different URL information It displays using two or more windows, and a program viewer chooses what is wished from two or more of those displayed windows, and is made to display.

[0108] [ others / in the case of viewing and listening to the program by which current broadcast is carried out as mentioned above with the television receiver 52 ] Even if it is the case where it is viewing and listening to the program which carried out cache record or which was recorded by the usual program record by the hard disk recorder 50 etc. It is suitable to display the page information concerning the homepage relevant to the broadcaster and a program, and the digest information concerning the program already broadcast from the displayed information etc. can also come to hand.

[0109] However, when the program in which the time amount after broadcast passed is reproduced, the page which shows the information which already starts the program depending on the case is eliminated, and do not exist, or although it may be updated by another contents Since the information on such the Internet being updated is usually carried out, a user is considered not to make it a special problem to such page information not being displayed.

[0110] According to the viewing-and-listening system of a program shown in this example as explained in full detail above The program recorded with program recording devices, such as a program under viewing and listening or a hard disk recorder, is reproduced with a television receiver. In order to supply the information concerning the program under the playback to terminal units, such as a personal computer, by domestic [ LAN ] etc., and for the terminal unit to acquire the auxiliary information which starts the program based on the information concerning the

supplied program and to display, The viewing-and-listening environment of a suitable program -- a user can peruse auxiliary information viewing and listening and as occasion demands -- can be constituted. [ for a program ]

[0111] And although the above-mentioned example described as what the program information under viewing and listening is transmitted to a personal computer by the television receiver or the hard disk recorder, and a personal computer acquires and displays the information relevant to the program as Acquisition of the information about the viewing-and-listening program requires offer of the information to which a television receiver or a hard disk recorder accompanies a service provision firm or a broadcaster. It is good also by the approach of acquiring the accompanying information offered by a service provision firm or the broadcaster with a personal computer, and displaying it.

[0112] Furthermore, when the accompanying information is transmitted to a television receiver or a hard disk recorder, the television receiver or a hard disk recorder transmits the transmitted accompanying information to a personal computer, and you may make it display the accompanying information with a personal computer.

[0113] In the case of which [ those ], a television screen displays a program. To use a personal computer as an object for perusal of the accompanying information offered from a website \*\* Li, Viewing and listening of the program by the television screen as an object for broadcast reception which is designed conventionally and introduced into the commercial scene, And presenting of proper information is made by operation proper to each other, and each with each equipment to the intention of a design of each equipment, such as displaying program auxiliary information acquired from the website etc. with the personal computer for information signal processing.

[0114] Although it is also convenient, viewing and listening to a program with a television screen if you can peruse the information on a website that the information relevant to the program is described, it is common for the television screen of the function of a man machine interface in which a television receiver has the information on a website in order to peruse performing retrieval actuation etc. to be inadequate, and it solves that the perusal environment of suitable information has not been acquired.

[0115] Furthermore, although the information on a website will be perused at the personal computer with which the function of a man machine interface is substantial, or a Web terminal Since information which starts the program under viewing and listening by the television receiver or the hard disk recorder in the former is not considered as the configuration automatically transmitted to a personal computer or a Web terminal, Although actuation in which the user himself accessed the site of a broadcasting station and followed the link from there to program page information needed [ the need ] complicated actuation, such as \*\* In the case where it is based on the viewing-and-listening system of the program illustrated here [ when viewing and listening to a television receiver, lying and sleeping in order to automate and to



perform actuation for that for example, ] A terminal unit like a Web pad is in a viewer side, and the viewing-and-listening system of a suitable program -- the page relevant to the program under viewing and listening is displayed automatically -- can be realized.

[0116] As mentioned above, although the television receiver or the hard disk recorder, and the viewing-and-listening system of the program performed using a personal computer or a Web terminal were described, without restricting to a hard disk recorder, the equipment which records, views and listens to a program may be VDR (Video Disc Recorder) or a DVD recorder, and although search of a viewing-and-listening program takes some time amount further to it, it may be the case where the so-called VTR is used.

[0117] Moreover, although it was described that the communication link with those recording apparatus or television receivers, and a personal computer or a Web terminal used domestic [ LAN ], what kind of thing is sufficient as infrared radiation, USB (Universal Serial Bus), LAN by cable splicing, or wireless LAN, and those means of communications are also realizing using the means of communications used as an infrastructure of the home network, when the spread of home networks will be made further from now on.

[0118]

[Effect of the Invention] While according to invention according to claim 1 selecting a broadcast channel, receiving program information and displaying the program information received and acquired as an image for viewing and listening In the terminal unit side with which the program name information concerning the name of program information is acquired, and the program name information is supplied to the terminal unit side which displays program auxiliary information, and the program name information is offered While transmitting the supplied program name information to a program information provider side through a network The program auxiliary information transmitted from a program information provider side is acquired as program auxiliary information for a display. Moreover, in order for the terminal unit to display by acquiring automatically the program information which a program information provider offers based on the transmitted program information, A user is effective in the ability to offer the viewing-and-listening approach of the program which can display auxiliary information relevant to a suitable program, without performing the limit on a display of effective information on the television screen for program viewing and listening on program viewing and listening about the program under viewing and listening.

[0119] Moreover, it faces reproducing the medium which recorded the program according to invention according to claim 2. The program name information concerning the name of the program under the playback is acquired. The program name information In the terminal unit side with which it is made to supply the terminal unit side which displays program auxiliary information, and the program name

information is offered While transmitting the supplied program name information to a program information provider side through a network The program auxiliary information transmitted from a program information provider side is acquired as program auxiliary information for a display. Moreover, in order for the terminal unit to display by acquiring automatically the program information which a program information provider offers based on the transmitted program information, A user is effective in the ability to offer the viewing-and-listening approach of the program which reproduces the recorded program which can display auxiliary information relevant to a suitable program, without performing the limit on a display of effective information on the television screen for program viewing and listening on program viewing and listening about the program under playback.

[0120] According to invention according to claim 3, moreover, the program name information supplied to especially a terminal unit In order to make it be the program name indicated by the electronic program guide acquired beforehand, Or since he is trying to supply the address information on the Internet provided with the information concerning the program acquired beforehand as a program name, In addition to claim 1 or the effectiveness of 2, it is effective in the ability to offer the viewing-and-listening approach of the program which can display auxiliary information relevant to a suitable program which acquires effective information automatically and displays it on program viewing and listening concerning the program.

[0121] Moreover, while according to invention according to claim 4 selecting a broadcast channel, receiving program information and displaying the program information received and acquired as an image for viewing and listening In the terminal unit side with which the program name information concerning the name of program information is acquired, and the program name information is supplied to the terminal unit side which displays program auxiliary information, and the program name information is offered While transmitting the supplied program name information to a program information provider side through a network The program auxiliary information transmitted from a program information provider side is acquired as program auxiliary information for a display. Moreover, in order for the terminal unit to display by acquiring automatically the program information which a program information provider offers based on the transmitted program information, A user is effective in the ability to offer the configuration of the program viewing-and-listening equipment which can display auxiliary information relevant to a suitable program, without performing the limit on a display of effective information on the television screen for program viewing and listening on program viewing and listening about the program under viewing and listening.

[0122] Moreover, it faces reproducing the medium which recorded the program according to invention according to claim 5. The program name information concerning the name of the program under the playback is acquired. The program name information In the terminal unit side with which it is made to supply the terminal

unit side which displays program auxiliary information, and the program name information is offered While transmitting the supplied program name information to a program information provider side through a network The program auxiliary information transmitted from a program information provider side is acquired as program auxiliary information for a display. Moreover, in order for the terminal unit to display by acquiring automatically the program information which a program information provider offers based on the transmitted program information, A user is effective in the ability to offer the configuration of the program viewing-and-listening equipment which reproduces the recorded program which can display auxiliary information relevant to a suitable program, without performing the limit on a display of effective information on the television screen for program viewing and listening on program viewing and listening about the program under playback.

[0123] According to invention according to claim 6, moreover, the program name information supplied to especially a terminal unit In order to make it be the program name indicated by the electronic program guide acquired beforehand, Or since he is trying to supply the address information on the Internet provided with the information concerning the program acquired beforehand as a program name, In addition to claim 4 or the effectiveness of 5, it is effective in the ability to offer the configuration of the program viewing-and-listening equipment which can display auxiliary information relevant to a suitable program which acquires effective information automatically and displays it on program viewing and listening concerning the program.

[0124] Moreover, while according to invention according to claim 7 selecting a broadcast channel, receiving program information and displaying the program information received and acquired as an image for viewing and listening In the terminal unit side with which the program name information concerning the name of program information is acquired, and the program name information is supplied to the terminal unit side which displays program auxiliary information, and the program name information is offered While transmitting the supplied program name information to a program information provider side through a network The program auxiliary information transmitted from a program information provider side is acquired as program auxiliary information for a display. Moreover, in order for the terminal unit to display by acquiring automatically the program information which a program information provider offers based on the transmitted program information, A user is effective in the ability to offer the program for viewing and listening of the program for performing the computer which can display auxiliary information relevant to a suitable program, without performing the limit on a display of effective information on the television screen for program viewing and listening on program viewing and listening about the program under viewing and listening.

[0125] Moreover, it faces reproducing the medium which recorded the program according to invention according to claim 8. The program name information concerning the name of the program under the playback is acquired. The program

name information In the terminal unit side with which it is made to supply the terminal unit side which displays program auxiliary information, and the program name information is offered While transmitting the supplied program name information to a program information provider side through a network The program auxiliary information transmitted from a program information provider side is acquired as program auxiliary information for a display. Moreover, in order for the terminal unit to display by acquiring automatically the program information which a program information provider offers based on the transmitted program information, A user without performing the limit on a display of effective information on the television screen for program viewing and listening on program viewing and listening about the program under playback It is effective in the ability to offer the program for viewing and listening of the program for performing the computer which reproduces the recorded program which can display auxiliary information relevant to a suitable program.

[0126] According to invention according to claim 9, moreover, the program name information supplied to especially a terminal unit In order to make it be the program name indicated by the electronic program guide acquired beforehand, Or since he is trying to supply the address information on the Internet provided with the information concerning the program acquired beforehand as a program name, In addition to claim 7 or the effectiveness of 8, on program viewing and listening concerning the program, acquire effective information automatically and display it. It is effective in the ability to offer the program for viewing and listening of the program for performing the computer which reproduces the recorded program which can display auxiliary information relevant to a suitable program.

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is the outline block diagram showing the example of the program viewing-and-listening structure of a system concerning the example of this invention.

[Drawing 2] It is the outline block diagram showing the example of a configuration of the program data utility firm concerning the example of this invention.

[Drawing 3] It is the outline block diagram showing the example of a configuration of the television receiver concerning the example of this invention.

[Drawing 4] It is the outline block diagram showing the example of a configuration of the hard disk recorder concerning the example of this invention.

[Drawing 5] It is drawing showing the example of a display concerning two or more program information depended on the personal computer concerning the example of

this invention.

[Drawing 6] The computer program carried in the television receiver concerning the example of this invention is illustrated with a flow chart.

[Drawing 7] The computer program carried in the hard disk recorder concerning the example of this invention is illustrated with a flow chart.

[Description of Notations]

1 Service Provision Firm

5 User \*\*

10 Program Information Offer Server

10a Service provision firm

11 Program Information Database

12 Program Auxiliary Information Database

16 Network Interface

30 Internet

50 Hard Disk Recorder

51 Personal Computer

52 Television Receiver

59 Remote Control

501 TV Tuner

502 A/D Converter

503 MPEG-2 Encoder

504 REC-FIFO

505 Hard Disk Record Regenerator

506 Hard Disk

507 Write-in Read-out Controller

508a Network interface

508b Domestic LAN interface

509 Program Name Discrimination Circuit

511 Buffer Memory

512 MPEG-2 Decoder

513 OSD

514 D/A Converter

516 Microcomputer

517 Temporary Storage Memory

519 Remote Control Interface

521 Tuner

522 Image Circuit

523 Adder Circuit

524 Display Circuit

525 Braun Tube

526 Multiple-Signal Generation Circuit

527a Network interface  
527b Domestic LAN interface  
528 Microcomputer  
528a Temporary storage memory  
529 Remote Control Interface

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